

AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS X EXAMINATION

MAY 2016

Chemistry Paper I

Time: 35 minutes Marks: 25

INSTRUCTIONS

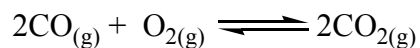
1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 25 only.
4. In each question there are four choices A, B, C, D. Choose ONE. On the answer grid black out the circle for your choice with a pencil as shown below.

Correct Way	Incorrect Ways
1 ☐ A ☐ B ☒ C ☐ D	1 ☐ A ☐ B ☒ C ☐ D
	2 ☐ A ☐ B ☒ C ☐ D
	3 ☐ A ☐ B ☒ C ☐ D
	4 ☐ A ☐ B ☒ C ☐ D

Candidate's Signature

5. If you want to change your answer, ERASE the first answer completely with a rubber, before blacking out a new circle.
6. DO NOT write anything in the answer grid. The computer only records what is in the circles.
7. You may use a simple calculator if you wish.

1. What will be the unit of equilibrium constant K_c for the given reaction?



- A. $\frac{\text{mol}}{\text{dm}^3}$
- B. $\frac{\text{dm}^3}{\text{mol}}$
- C. $\frac{\text{mol}^{-2}}{\text{dm}^6}$
- D. $\frac{\text{dm}^{-3}}{\text{mol}}$

2. Which of the following characteristics is TRUE for a forward reaction?

- A. It speeds up gradually.
- B. It slows down gradually.
- C. It proceeds from right to left only.
- D. It is represented by a double headed arrow.

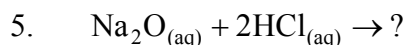
3. According to the given chemical equation, the formation of nitrogen dioxide gas can be increased by



	Temperature	Pressure
A	High	Low
B	Low	High
C	High	High
D	Low	Low

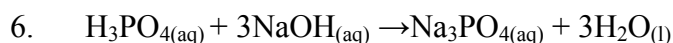
4. The pH of 0.0001 M solution of $\text{Ca}(\text{OH})_2$ is

- A. 3
- B. 4
- C. 10
- D. 11



The by-product(s) of the given reaction is/ are

- A. $\text{H}_{2(\text{g})}$
- B. $\text{H}_2\text{O}_{(\text{l})}$
- C. $\text{H}_2\text{O}_{(\text{l})} + \text{O}_{2(\text{g})}$
- D. $\text{H}_2\text{O}_{(\text{l})} + \text{Cl}_{2(\text{g})}$

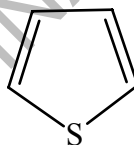


What volume of 2 M $\text{H}_3\text{PO}_{4(\text{aq})}$ is required to neutralise 25 cm³ of 2.5 M $\text{NaOH}_{(\text{aq})}$?

- A. 10.42 cm³
- B. 31.25 cm³
- C. 41.67 cm³
- D. 93.75 cm³

7. The given structure is an example of a/ an

- A. acyclic compound.
- B. alicyclic compound.
- C. aromatic compound.
- D. heterocyclic compound.



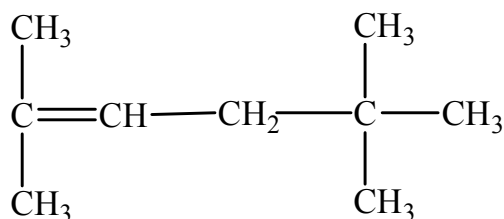
8. Though sodium bicarbonate (NaHCO_3) contains carbon and hydrogen yet it is not classified as an organic compound. This is because organic compounds should GENERALLY have

- A. high melting point.
- B. high rate of reaction.
- C. carbon bound to an oxygen.
- D. carbon bound to a hydrogen.

9. The functional group present in $\text{C}_2\text{H}_5\text{OCH}_2\text{CH}_2\text{CH}_3$ is

- A. ester.
- B. ether.
- C. ketone.
- D. aldehyde.

10.



The IUPAC name of the given organic compound is

- A. 2,2,5-trimethyl-4-hexene.
 - B. 2,5,5-trimethyl-2-hexene.
 - C. 2,2-dimethyl-4-methylhexene.
 - D. 5,5-dimethyl-2-methylhexene.
11. Which of the following substances will decolourise the pink colour of acidified solution of potassium permanganate?
- A. C_2H_6
 - B. C_3H_8
 - C. C_5H_{10}
 - D. C_7H_{16}
12. Which of the following processes is used for the conversion of vegetable oil into banaspati ghee?
- A. Halogenation
 - B. Hydrogenation
 - C. Dehalogenation
 - D. Dehydrogenation
13. Carbohydrates are made up of
- A. carbon, hydrogen and oxygen.
 - B. carbon, hydrogen and phosphorus.
 - C. carbon, hydrogen, oxygen and sulphur.
 - D. carbon, hydrogen, oxygen and nitrogen.
14. When albumin protein of egg white is heated, it shows a change in
- A. colour and viscosity.
 - B. mass and particle size.
 - C. volume and peptide bonding.
 - D. primary and secondary structure.

15. 5% dextrose solution, given intravenously to a patient, provides all of the following EXCEPT that it
- A. replaces lost fluid.
 - B. strengthens bones.
 - C. increases blood sugar.
 - D. fulfils nutritional needs.
16. The structure of deoxyribonucleic acid does not consist of
- A. an inorganic phosphate group.
 - B. thymine as one of the nitrogenous bases.
 - C. six carbon sugar as the backbone of each chain.
 - D. a double helix with two strands coiled around each other.
17. Which of the following is a characteristic of the lithosphere?
- A. It is a source of minerals and fuels.
 - B. It is a shield against solar radiation.
 - C. It is a collective mass of oceans and fresh water bodies.
 - D. It is a combination of plants, animals and microorganisms.
18. It is advised to switch off gas heaters before going to sleep.
- This is because the incomplete combustion of natural gas in a poorly ventilated room produces
- A. carbon dioxide.
 - B. sulphur dioxide.
 - C. nitrogen dioxide.
 - D. carbon monoxide.
19. Which of the following is an adverse effect of acid rain?
- A. Greenhouse effect
 - B. Melting of glaciers
 - C. Depletion of ozone
 - D. Death of aquatic life
20. Sodium hypochlorite is often added in swimming pools because it
- A. kills small insects in water.
 - B. removes turbidity from water.
 - C. kills pathogenic bacteria in water.
 - D. removes unpleasant smell from water.

21. Which of the following water borne diseases is responsible to damage bones and teeth?
- A. Cholera
 - B. Typhoid
 - C. Fluorosis
 - D. Hepatitis
22. Which of the following contains the majority (approx. 97%) of the world's water?
- A. Oceans
 - B. Ice caps
 - C. Glaciers
 - D. Ground water
23. Natural gas is a mixture of hydrocarbons mainly consisting of
- A. butane.
 - B. pentane.
 - C. propane.
 - D. methane.
24. Which of the following statements is TRUE about synthetic fertilisers?
- A. They add organic content to the soil.
 - B. They release the nutrients very rapidly.
 - C. They support microbiological life in the soil.
 - D. They are derived from plants and human waste.
25. Which of the following chemicals are used in the recovery of ammonia in Solvay's process?
- A. sodium carbonate + ammonium chloride
 - B. ammonium chloride + calcium carbonate
 - C. ammonium chloride + calcium hydroxide
 - D. sodium chloride + ammonium bicarbonate

Please use this page for rough work

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